ADVISING WORKSHEET

BACHELOR OF SCIENCE DEGREE MAJOR IN BIOLOGY
MEDICAL LABORATORY SCIENCE OPTION
General Bulletin 2019-2020

TRANSFER INSTITUTION(S):

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_____

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Name _____

Student ID # _____

GENERAL EDUCATION REQUIREMENTS – SEE ATTACHED PAGE FOR SPECIFIC COURSES

General Education Category	Course #	Credits	Grade	Semester	Equivalent
Category I: Global Academic Skills (9 credits) A. Mathematics (3 credits) *STAT 216 – major requirement*					
B. English (3 credits)					
C. Communication & Information Literacy (3 credits)					
Category II: Natural Sciences (7 credits) 2 lectures (6 credits) & 1 lab (1 credit) (1 life science & 1 physical science & 1 lab)					
BIOB 160/161 & CHMY 141 are major requirements					
Category III: Social Sciences and History (6 credits) A. Social Science (3 credits)					
B. History (3 credits)					
Category IV: Cultural Diversity (3 credits)					
Category V: Arts & Humanities (6 credits) A. Fine Arts (3 credits)					
B. Humanities (3 credits)					

A minimum grade of "C-"is required in all General Education courses.

Note: Certain degrees may require a minimum grade of "C" in General Education courses.

Students should consult with their advisors to determine if specific courses are necessary in order to satisfy the General Education requirements within this program.

Certain courses in this program have prerequisites; students should check the course descriptions in the General Bulletin for required prerequisites.

Reviewed:

_____
_____
_____
_____

GENERAL EDUCATION REQUIREMENTS

CATEGORY I: GLOBAL ACADEMIC SKILLS **9 credits**

Students are required to take one course from each subcategory

Subcategory A - Mathematics			**3 credits**
M	105	Contemporary Mathematics	3
M	114	Extended Technical Mathematics	3
M	121	College Algebra	3
M	122	College Trigonometry	3
M	130	Mathematics for Elementary Teachers I	3
M	140	College Math for Healthcare	3
M	143	Finite Mathematics	4
M	161	Survey of Calculus	3
M	171	Calculus I	4
STAT	141	Introduction to Statistical Concepts	3
STAT	***216***	***Introduction to Statistics***	***4***

Subcategory B - English			**3 credits**
WRIT	101	College Writing I	3
WRIT	121	Introduction to Technical Writing	3
WRIT	122	Introduction to Business Writing	3
WRIT	201	College Writing II	3
WRIT	220	Business & Professional Writing	3
WRIT	221	Intermediate Technical Writing	3

Subcategory C- Communication & Information Literacy			**3 credits**
BMIS	150	Cyber Security and Electronic Communication	3
COMX	111	Introduction to Public Speaking	3
COMX	115	Introduction to Interpersonal Communication	3
LSCI	125	Research in the Information Age	3

CATEGORY II: NATURAL SCIENCES **6 cr. lecture & 1 cr. lab**

Students are required to take one course from each subcategory and at least one corresponding lab or Integrated Sciences

Subcategory A – Life Sciences			**3-4 credits**
BIOB	101	Discover Biology	3
BIOB	102	Discover Biology Lab	1
BIOB	121	Fundamentals of Biology for Allied Health	3
BIOB	122	Fund of Biology: Evolution, Ecology, and Biodiversity	3
BIOB	123	Fund of Biology: The Nature of Nutrition	3
BIOB	***160***	***Principles of Living Systems***	***3***
BIOB	***161***	***Principles of Living Systems Lab***	***1***

Subcategory B – Physical Sciences			**3-4 credits**
ASTR	110	Introduction to Astronomy	3
ASTR	111	Introduction to Astronomy Lab	1
CHMY	121	Introduction to General Chemistry	3
CHMY	122	Introduction to General Chemistry Lab	1
CHMY	***141***	***College Chemistry I***	***3***
CHMY	***142***	***College Chemistry Laboratory I***	***1***
GEO	101	Introduction to Physical Geology	3
GEO	102	Introduction to Physical Geology Laboratory	1
GPHY	111	Introduction to Physical Geography	3
GPHY	112	Introduction to Physical Geography Lab	1
PHSX	103	Our Physical World	3
PHSX	104	Our Physical World Lab	1
PHSX	205	College Physics I	3
PHSX	206	College Physics I Lab	1

Integrated Sciences

SCIN	101, 102, 103, 104	Integrated Sciences	3, 1, 3, 1

CATEGORY III: SOCIAL SCIENCES AND HISTORY **6 CREDITS**

Students are required to take one course from each subcategory

Subcategory A – Social Sciences			**3 credits**
ANTY	217	Physical Anthropology & Archeology	3
BGEN	105	Introduction to Business	3
COMX	106	Communicating in a Dynamic Workplace	3
ECNS	201	Principles of Microeconomics	3
ECNS	202	Principles of Macroeconomics	3
EDU	105	Education and Democracy	3
GPHY	141	Geography of World Regions	3
HTH	110	Personal Health and Wellness	3
PSCI	210	Introduction to American Government	3
PSCI	220	Introduction to Comparative Government	3
PSYX	100	Introduction to Psychology	3
SOCI	101	Introduction to Sociology	3
SOCI	201	Social Problems	3

Subcategory B - History			**3 credits**
HSTA	101	American History I	3
HSTA	102	American History II	3
HSTR	101	Western Civilization I	3
HSTR	102	Western Civilization II	3
HSTR	103	Honors Western Civilization I	3
HSTR	104	Honors Western Civilization II	3
PSCI	230	Introduction to International Relations	3

CATEGORY IV: CULTURAL DIVERSITY 3 credits

A&SC/WGSS	274	Women, Culture, and Society	3
ANTY	220	Culture and Society	3
ARTH	160	Global Visual Culture	3
COMX	212	Introduction to Intercultural Communication	3
GPHY	121	Human Geography	3
HTH	270	Global Health Issues	3
LIT	230	World Literature	3
MUSI	207	World Music	3
NASX	105	Introduction to Native American Studies	3
NASX	205	Native Americans in Contemporary Society	3
PHL	271	Indian Philosophies and Religions	3
PHL	272	Chinese Philosophies and Religions	3
REHA	201	Introduction to Diversity in Counseling	3
RLST	170	The Religious Quest	3
SPNS	150	The Hispanic Tradition	3

CATEGORY V: ARTS & HUMANITIES **6 credits**

Students are required to take one course from each subcategory

Subcategory A – Fine Arts			**3 credits**
ARTZ	101	Art Fundamentals	3
ARTZ	105	Visual Language-Drawing	3
ARTZ	106	Visual Language-2-D Foundations	3
ARTZ	108	Visual Language-3-D Foundations	3
ARTZ	131	Ceramics for Non-majors	3
CRWR	240	Intro Creative Writing Workshop	3
FILM	160	Introduction to World Cinema	3
LIT	270	Film & Literature	3
MART	260	Computer Presentation and Animation	3
MUSI	101	Enjoyment of Music	3
MUSI	114	Band: MSUB Symphonic	1
MUSI	131	Jazz Ensemble I: MSUB	1
MUSI	147	Choral Ensemble: University Chorus	1
PHOT	154	Exploring Digital Photography	3
THTR	101	Introduction to Theatre	3
THTR	120	Introduction to Acting I	3

Subcategory B - Humanities			**3 credits**
ARTH	150	Introduction to Art History	3
HONR	111	Perspectives and Understanding	3
LIT	110	Introduction to Literature	3
LIT	240	The Bible as Literature	3
PHL	110	Introduction to Ethics	3
PHL	111	Philosophies of Life	3
PHL	254	People and Politics	3

		Course	Credits	Grade	Semester	Equivalent
		A minimum grade of C- or better is required in all major coursework				
Biology Requirements						
*BIOB	160	Principles of Living Systems	3			
* BIOB	161	Principles of Living Systems Lab	1			
BIOM	250	Microbiology for Health Sciences	3			
BIOM	251	Microbiology for Health Sciences Lab	1			
BIOB	260	Cellular and Molecular Biology	3			
BIOB	261	Cellular and Molecular Biology Lab	1			
BIOH	301	Human Anatomy and Physiology I	3			
BIOH	302	Human Anatomy and Physiology I Lab	1			
BIOH	311	Human Anatomy and Physiology II	3			
BIOH	312	Human Anatomy and Physiology II Lab	1			
BIOB	375	General Genetics	3			
BIOB	376	General Genetics Lab	1			
BIOM	400	Medical Microbiology	3			
BIOM	401	Medical Microbiology Lab	1			
BIOH	405	Hematology	3			
BIOH	406	Hematology Lab	1			
BIOB	410	Immunology	3			
BIOM	427	General Parasitology	2			
BIOB	499	Senior Thesis/Capstone	1			
Unrestricted Biology Elective			2			
		Biology Total	**40**			

Chemistry Requirements						
*CHMY	141	College Chemistry I	3			
*CHMY	142	College Chemistry Lab I	1			
CHMY	143	College Chemistry II	3			
CHMY	144	College Chemistry Lab II	1			
CHMY	211	Elements of Organic Chemistry	3			
CHMY	212	Elements of Organic Chemistry Lab	1			
BCH	380	Biochemistry	3			
BCH	381	Biochemistry Lab	1			
		Chemistry Total	**16**			

NOTE: Students wishing to obtain a minor in Chemistry will need to take CHMY 311/312, CHMY 321/322 **and** CHMY 323/324 instead of CHMY 211/212.

Mathematics/Statistics Requirement (choose **one**)

*STAT	216	Introduction to Statistics	4			
STAT	217	Intermediate Statistical Concepts	4			
		Mathematics/Statistics Total	**4**			

Physics Requirement (choose **one** Physics course with lab)

*PHSX	205	College Physics I	3			
* PHSX	206	College Physics I Lab	1			
or						
PHSX	220	Physics I	3			
PHSX	221	Physics I Lab	1			
		Physics Total	**4**			

Upper Division Science electives (6 credits)

^CHMY	311	Analytical Chemistry – Quantitative Analysis	3			
^CHMY	312	Analytical Chemistry Laboratory – Quantitative Analysis	1			

(^Highly recommended **but not required**.) **Total** **6**

Professional Medical Lab Training Core – 37 credits total

#BIOH	470	Summer Clinical Laboratory	V			
#BIOH	471	Professional Training I Fall Semester	V			
#BIOH	472	Professional Training II Spring Semester	V			

#These courses require an extra fee.

Courses in the professional training core (BIOH 470 Summer Clinical Laboratory, BIOH 471 Professional Training I Fall Semester and BIOH 472 Professional Training II Spring Semester) will be taught at an affiliated institution which include Montana State University Bozeman; University of North Dakota, Grand Forks; Sacred Heart School of Medical Technology, Spokane, Washington; or the Colorado Center for Medical Laboratory Science, Aurora (www.MedLabEd.org). The training and credits from all four programs will allow students to fulfill the requirements needed to take the national examinations to become certified clinical laboratory scientists or medical technologists. All students enrolled at each training program site will remain MUS students at their respective institutions.

*May satisfy General Education requirements.

BACHELOR OF SCIENCE DEGREE IN BIOLOGY – MEDICAL LABORATORY SCIENCE OPTION

Categories	**Credits**	**Earned**	**Remaining**
General Education	31	_____	_____
Biology Requirements	**36	_____	_____
Chemistry Requirements	***13	_____	_____
Math/Statistics Requirements	***1	_____	_____
Physics Requirements	4	_____	_____
Upper Division Science Electives	6	_____	_____
Professional Med Lab Training Core	37	_____	_____
Total	128	_____	_____

Students with a 2.5 GPA or higher can apply for a fifth year of professional training to earn a degree in Biology/Medical Laboratory Science Option from MSU Billings. Total credits for graduation are 128. Additional credits are required in this option because students take an additional three semesters of courses. These additional semesters are necessary because professional training programs approved by the National Accrediting Agency for Clinical Laboratory Science (NAACLS, www.naacls.org) are 12 months in duration. All students desiring to become a certified Clinical Laboratory Scientist must take a national certification examination upon completion of the year of professional training.

****4 credits that also satisfy General Education requirements are not included in the total number of credits.**
*****3 credits that also satisfy General Education requirements are not included in the total number of credits.**
It is the student's responsibility to know and meet the requirements for graduation.
A minimum of 36 credits must be upper division classes (300 and above).